



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/621,501 | 07/17/2003 | Burkhard Groh | P03,0244 | 2606 |
| 26574 | 7590 | 02/04/2005 | EXAMINER | |
| SCHIFF HARDIN, LLP PATENT DEPARTMENT 6600 SEARS TOWER CHICAGO, IL 60606-6473 | | | KAO, CHIH CHENG G | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2882 | |

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/621,501 | GROH ET AL. | |
| | Examiner | Art Unit | |
| | Chih-Cheng Glen Kao | 2882 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-8 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 12 December 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>12/12/03</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig. 1, #10. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first x-ray dose, second x-ray dose, and scaling of claims 3 and 7, and the averaging of claims 4 and 8 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet,

Art Unit: 2882

even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities.

In the following format (location of objection; suggestion for correction), the following corrections may obviate their respective objections: (page 2, line 15, "fore"; replacing "fore" with - -for- -), (page 6, last line, "scattered n the body"; replacing "n" with - -from- -), and (page 7, line 8, "quality if the x-ray recordings"; replacing "if" with - -of- -).

Appropriate correction is required.

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required.

Claim 7 recites a first x-ray source to obtain a scattered radiation image using a first x-ray dose, activating at least a first x-ray source to obtain diagnostic images using a second x-ray dose, and subtraction from diagnostic images, which is assumed to be obtained from a second x-ray system having a second x-ray source, dependent on a relationship between the first and second x-ray doses of the first x-ray source. However, the specification does not provide proper antecedent basis for this relationship.

Claim Objections

5. Claims 1, 2, 5, and 6 are objected to because of the following informalities, which appear to be minor draft errors including grammatical and lack of antecedent basis problems.

In the following format (location of objection; suggestion for correction), the following corrections may obviate their respective objections: (claim 1, line 8, “and thereby producing”; deleting “and”), (claim 2, lines 6-7, “with said first x-ray detector with said first x-ray source”; inserting - -and- - after “detector”), (claim 2, lines 7-8, “unactivated, and thereby obtaining”; deleting “and”), (claim 2, line 10, “scattered radiation image, said diagnostic”; replacing the comma with - -from- -), (claim 5, line 4, “ray d t ctor”; replacing “d t ctor” with - -detector- -), (claim 5, line 8, “and thereby producing”; deleting “and”), (claim 5, line 16, “to components for”; replacing “components” with - -compensate- -), (claim 6, line 2, “unit with said first and second”; inserting a comma after “unit”), (claim 6, line 5, “and thereby obtaining”; deleting “and”), and (claim 6, line 8, “radiation image, said diagnostic images”; replacing the comma with - -from- -).

For purposes of examination, the claims have been treated as such. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 3, 4, 7, and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims recite the following limitations: (claim 3, line 5, “said diagnostic images”), (claim 4, line 5, “said diagnostic images”), (claim 7, line 6, “said diagnostic images”), and (claim 8, line 6, “said diagnostic images”). There is insufficient antecedent basis for these limitations in the claims. The claims are indefinite, since it is not clear which x-ray system the diagnostic images come from.

The following corrections may obviate their respective rejections: (claim 3, line 5; inserting - -obtained from said second x-ray system- - after “said diagnostic images”), (claim 4, line 5; inserting - -obtained from said second x-ray system- - after “said diagnostic images”), (claim 7, line 6; inserting - -obtained from said second x-ray system- - after “said diagnostic images”), and (claim 8, line 6; inserting - -obtained from said second x-ray system- - after “said diagnostic images”). For purposes of examination, the claims have been treated as such.

7. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: a second x-ray source to obtain diagnostic images using a second x-ray dose.

Claim 7 first recites a first x-ray source to obtain a scattered radiation image. Since the first x-ray source is used, the second x-ray detector of the second x-ray system must be used to detect the scattered radiation image as disclosed by Applicant's patent application (page 7, lines 15-19). The claim also recites that the scattered radiation image of the second detector is subtracted from diagnostic images, which is assumed to be from the second detector of the second x-ray system as implied from Applicant's patent application (page 8, lines 11-13). Since the diagnostic images are from the second detector, the second x-ray source must be used to send x-rays to the second detector for diagnostic images. However, the second x-ray source is not recited in claim 7, resulting in omissions of essential elements.

Replacing the first x-ray source with the second x-ray source to obtain diagnostic images using a second x-ray dose in line 3 of claim 7 may obviate this rejection, but such an amendment would create a new rejection under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim has been examined as best interpreted by the Examiner as follows.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Nonaka (JP 2000-102529).

9. Regarding claims 1 and 5, Nonaka discloses a method for operating an x-ray arrangement to compensate for scattered radiation, said x-ray arrangement comprising a first x-ray system having a first x-ray source (fig. 1, #11) and a first x-ray detector (fig. 1, #12), a second x-ray system having a second x-ray source (fig. 1, #21) and a second x-ray detector (Fig. 1, #22), with said first and second x-ray systems in a specified position relative to each other (fig. 1), a control unit (fig. 1, #30) for irradiating a subject with x-rays from said first x-ray source, thereby producing scattered radiation, and detecting said scattered radiation with the second x-ray detector with said second x-ray source being unactivated, thereby obtaining a scattered radiation image from said second x-ray detector (paragraph 10, lines 7-9); memory for saving said scattered radiation image (paragraph 10, lines 7-9, “storage means”); and said control unit (fig. 1, #30) operating both of said first and second x-ray systems to obtain x-ray diagnostic images of said subject (paragraph 10, lines 2-7) and subtracting said scattered radiation image from the diagnostic images obtained from said second x-ray system (paragraph 23) to compensate for said scattered radiation therein.

10. Regarding claims 2 and 6, Nonaka further discloses with said first and second x-ray systems in said specified position (Fig. 1), the control unit (fig. 1, #30) irradiating said subject

with x-rays from said second x-ray source, thereby producing further scattered radiation, and detecting said further scattered radiation with said first x-ray detector and with said first x-ray source being unactivated, thereby obtaining a further scattered radiation image (paragraph 10, lines 9-11); saving said further scattered radiation image in memory (paragraph 10, lines 9-11, "storage means"); and said control unit subtracting said further scattered radiation image from said diagnostic images obtained with said first x-ray system (paragraph 23).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nonaka as applied to claims 1 and 5 above, and further in view of Besson (US Patent Application Publication 2004/0202280).

Nonaka discloses a method and apparatus as recited above.

However, Nonaka does not disclose obtaining a scattered radiation image using a first x-ray dose, obtaining a diagnostic image using a second x-ray dose, different from said first x-ray dose, and scaling said scattered radiation image, prior to subtraction from said diagnostic image, dependent on a relationship between said first and second x-ray doses.

Besson teaches obtaining a scattered radiation image using a first x-ray dose, obtaining a diagnostic image using a second x-ray dose, different from said first x-ray dose, and scaling said scattered radiation image, prior to subtraction from said diagnostic image, dependent on a relationship between said first and second x-ray doses (paragraph 75).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the method and apparatus of Nonaka with the averaging of Besson, since one would be motivated to make such a modification to reduce image degradation (paragraph 10) as shown by Besson.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Allowable Subject Matter

12. Claims 4 and 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 4 and 8, prior art does not disclose or fairly suggest a method or apparatus including obtaining a plurality of scattered radiation images with a first x-ray source and second radiation detector of a second x-ray system, averaging said plurality of scattered radiation images to obtain an average scattered image, and subtracting said average scattered

radiation image from said diagnostic images obtained from said second x-ray system, in combination with all the limitations in each respective claim and base claim.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent Application Publication 2004/0228442 discloses a bi-plane system (Fig. 1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gk



DAVID V. BRUCE
PRIMARY EXAMINER